On dead matter, ozone exerts a powerfully destructive action, resembling in this way chlorine, iodine, and especially bromine.

Ozone is a disinfectant and deodorizer belonging to those bodies which disinfect and deodorize by resolving and decomposing into primitive and innocuous forms, competing in this respect with substances already named—*i. e.*, chlorine, bromine, and iodine. It possesses these qualities in a less degree than chlorine and bromine, and is, in many cases, not so applicable as iodine.

As a preventive of disease, ozone can only act by destroying organic animal poisons, in which respect it may be compared with the substances I have more than once named. With regard to the disinfecting and deodorizing powers of ozone, I would refer you to the opinions of the late Dr. Barker, contained in the Hastings prize essay for 1865. The subject of comparison, and indeed the whole subject of deodorizing and disinfecting, is there so admirably, so exhaustively discussed, as to leave, it seems to me, nothing further to be said on the subject.

Lastly, as a remedy. In the form of ozonized oil, of ozonized ether, and ozonized water, it once more ranks with a similar combination of remedies, containing chlorine, bromine, and especially iodine. Whether, in any respect, it may prove to have greater advantages than the last named trusty and ready agent, can only be conclusively arrived at by determining whether it will do what iodine will *not* do, and this can only be decisively made out by applying to it the test of inductive philosophy—a rigid exclusion of all that is ineffective.—*Med. Press and Circular*, Jan. 15, 1868.

MEDICAL PATHOLOGY, SPECIAL THERAPEUTICS, AND PRACTICAL MEDICINE.

14. *Intermittent or Paroxysmal Hœmaturia.*—The *Edinburgh Med. Journal* for May, 1868, contains some interesting remarks on this disease, with an account of four cases by Dr. EDWARD HEADLAM GREENHOW. Dr. G. says that in all the cases which he has seen of this disease, "the attacks have been excited by the same cause, have taken the same form, exhibited the same general group of symptoms, and run the same definite course. The immediate exciting cause of the attacks has been invariably some definite exposure to cold or wet. The form taken by the attacks has been invariably paroxysmal, the paroxysms coming on suddenly, almost immediately after the chill was experienced, and passing off rapidly when the effects of the chill had been counteracted and the patient had become thoroughly warm. The general group of symptoms has been invariably the same, the additional ones occasionally exhibited being apparently due to an unusual degree of constitutional disturbance. In every instance the paroxysms have begun with coldness of the extremities, followed by general chilliness, amounting in the severer attacks to rigors. In like manner, in every case, the chilliness or shivering has been attended by a feeling of weight and pain in the loins, and by pain or a sense of weakness or stiffness in the lower limbs. The chilliness has been usually, though not always, followed by an imperfectly marked febrile hot stage. The patients have invariably passed, during the paroxysms, urine looking as if it were mixed with blood, and identical in general character. And, lastly, the same definite course has been run by the paroxysms in every case. From half an hour to two hours after the chilliness or rigors the patient has never failed to pass the first dark-coloured urine, which has always been highly albuminous, and has contained numerous crystals of oxalate of lime, with more or less of brownish, or yellowish-red, amorphous granular matter and a few hyaline casts, but only occasionally some stray blood-corpuscles. At each succeeding micturition after the chilliness, the urine has invariably shown more or less diminution of colour, of albumen, of oxalate of lime, and of its other abnormal contents; resuming its natural character and appearance by the second or third micturition after slight attacks, and usually

by the fourth or fifth after severer paroxysms. By the second day after an attack the patients, as a rule, have regained their ordinary degree of health and strength, and have continued well until some fresh exposure has brought on a new attack of their complaint. To this summary I may add, that, so far as my observation extends, all the patients suffering from this disease have had the same pale, sallow, cachectic aspect, two of them having been distinctly jaundiced, and the others having all had at times an icteroid tint of skin.

"It appears to me that this train of identical circumstances, in so considerable a number of cases, places it beyond question that intermittent, or, as I think Dr. Pavy more accurately terms it, paroxysmal hæmaturia, is a definite disease, due in all cases to the same remote constitutional cause. It is quite certain that the only medical treatment which appears to have any effect in diminishing the liability to suffer from the paroxysms on every exposure, is treatment directed, during the intervals, towards the improvement of the general health and the strengthening of the patient's constitution. Once the paroxysms have set in, the most simple means for restoring warmth are all that I have found it advisable to use. The short duration of the paroxysms, the very general absence of blood-corpuscles from the urine, even at the time of the paroxysms, and the complete recovery of the normal character of the urine within a few hours after their subsidence, seem to show that there can be no cause of hemorrhage in the kidneys themselves, but rather that the disintegrated blood transudes through the walls of the bloodvessels in the Malpighian bodies. Indeed, I regard the kidneys rather as the organs of elimination than as the seat of the disease, and I consider the renal irritation, the existence of which is manifested by the pain in the loins and by the presence of casts, and occasionally also of stray blood-corpuscles in the urine, to be a secondary affection consequent upon congestion of the kidneys produced by the sudden and unusual strain thrown upon them. Possibly the paroxysms may consist in the sudden disintegration of an unusually large quantity of blood-corpuscles, setting free so considerable an amount of hæmato-globulin that it cannot undergo the normal changes, but is eliminated through the kidneys in a comparatively unaltered state."

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15. *Catarrhal Icterus.*—Catarrhal icterus, and icterus accompanying poisoning by phosphorus, are produced, according to Virchow, by a catarrh of the intestinal portion of the common bile-duct. The sudden dilatation, and intense colouring, of this duct, together with the obstruction and the coloration of the intestinal portion of the duct, furnish the proofs on which the Berlin Professor relies. But the dilatation of the common bile-duct, and the deep colouring of this duct and of the hepatic-duct, are wanting in many cases. Dr. O. WYSS, who has had the opportunity of observing many cases of poisoning by phosphorus, has not been able to discover the presence of these lesions; and has not even been able to find the mucous plug which, according to Virchow, should be found obstructing the terminal portion of the common bile-duct. The undilated biliary ducts contained a colourless thick mucus; the walls were coloured by bile, and the intestine did not contain any bilious fluid. In order to elucidate this point, M. Wyss examined whether animals having biliary fistulæ became icteric after poisoning by phosphorus. If the icterus were due simply to the obstruction of the intestinal portion of the common bile-duct, it would, in this case, be absent, as the bile would freely escape outwardly. Several dogs, having biliary fistulæ, were poisoned by an injection of phosphorized oil into the rectum. By this method, the vomiting which follows phosphorized injections into the stomach was avoided. The results were as follows. The dogs all had icterus; the urine contained biliary acids. During the icterus the bile did not flow continuously as before the poisoning; sometimes it was mixed with a considerable quantity of mucous matter; sometimes the flow was completely stopped. A thick colourless mucus, which could be removed by forceps, accumulated in the fistulous passage; after its removal, some drops of bile flowed. The conclusions to be drawn from these experiments are the following: 1. The icterus observed in phosphorus-poisoning is a true catarrhal icterus; for observers have remarked a catarrhal affection of the biliary ducts, accompanied by a copious secretion of mucous matters. 2. Catarrhal icterus is not attributable to a catarrh of the